



UNITED STATES DEPARTMENT OF COMMERCE  
Patent and Trademark Office

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SERIAL NUMBER	FILING DATE	FIRST NAMED APPLICANT	ATTORNEY DOCKET NO.
08/437,975	05/10/95	ZURAVLEFF	W 018414-082

JAMES A LABARRE  
BURNS DOANE SWECKER & MATHIS  
PO BOX 1404  
ALEXANDRIA VA 22313-1404

B3M1/1105

EXAMINER	
ASTA, F	
ART UNIT	PAPER NUMBER
2318	#7

DATE MAILED: 11/05/96

Please find below a communication from the EXAMINER in charge of this application.

Commissioner of Patents

<b>Notice of Allowability</b>	Application No. <b>08/437,975</b>	Applicant(s) <b>Zuravleff et al</b>
	Examiner <b>Frank J. Asta</b>	Group Art Unit <b>2318</b>



All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance and Issue Fee Due or other appropriate communication will be mailed in due course.

- This communication is responsive to Amendment A filed Aug 12, 1996 and Suppl. Amendment B filed 10/28/96.
- The allowed claim(s) is/are 1,3-11,13 and 15-23 renumbered 1-20 respectively.
- The drawings filed on \_\_\_\_\_ are acceptable.
- Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- All  Some\*  None of the CERTIFIED copies of the priority documents have been
- received.
  - received in Application No. (Series Code/Serial Number) \_\_\_\_\_.
  - received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
- \*Certified copies not received: \_\_\_\_\_.
- Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

A SHORTENED STATUTORY PERIOD FOR RESPONSE to comply with the requirements noted below is set to EXPIRE THREE MONTHS FROM THE "DATE MAILED" of this Office action. Failure to timely comply will result in ABANDONMENT of this application. Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

- Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL APPLICATION, PTO-152, which discloses that the oath or declaration is deficient. A SUBSTITUTE OATH OR DECLARATION IS REQUIRED.
- Applicant MUST submit NEW FORMAL DRAWINGS
- because the originally filed drawings were declared by applicant to be informal.
- including changes required by the Notice of Draftsperson's Patent Drawing Review, PTO-948, attached hereto or to Paper No. 3.
- including changes required by the proposed drawing correction filed on \_\_\_\_\_, which has been approved by the examiner.
- including changes required by the attached Examiner's Amendment/Comment.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the reverse side of the drawings. The drawings should be filed as a separate paper with a transmittal letter addressed to the Official Draftsperson.

- Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Any response to this letter should include, in the upper right hand corner, the APPLICATION NUMBER (SERIES CODE/SERIAL NUMBER). If applicant has received a Notice of Allowance and Issue Fee Due, the ISSUE BATCH NUMBER and DATE of the NOTICE OF ALLOWANCE should also be included.

#### Attachment(s)

- Notice of References Cited, PTO-892
- Information Disclosure Statement(s), PTO-1449, Paper No(s). \_\_\_\_\_
- Notice of Draftsperson's Patent Drawing Review, PTO-948
- Notice of Informal Patent Application, PTO-152
- Interview Summary, PTO-413
- Examiner's Amendment/Comment
- Examiner's Comment Regarding Requirement for Deposit of Biological Material
- Examiner's Statement of Reasons for Allowance

Art Unit: 2318

This is in response to Amendment A filed August 12, 1996 and Supplemental Amendment B filed October 28, 1996. Amended claims 1,3-11,13 and 15-23 are pending.

Reasons For Allowance

The following is an examiner's statement of reasons for allowance: The claims of the present application are directed to a controller for a synchronous DRAM for maximizing throughput of memory requests from an external device to the synchronous DRAM. The instant claims set forth a sorting unit which receives memory requests and sorts these memory requests based on their addresses. The memory requests are further tagged for indicating a sending order before these requests are sent to the sorting unit. The instant claims then set forth a throughput maximizing unit for processing the memory requests in response to scheduling and the tagging and sorting which would maximize the use of the data slots of the synchronous DRAM.

Iyers, U.S. Patent 5179667 which was applied as prior art in the first office action details a synchronous DRAM. controller which maximizes throughput by processing the memory requests according to scheduling. However Iyers does not disclose tagging the memory requests and then sorting the memory requests for indication of a sending order. Therefore since Iyers does not teach or detail the tagging limitation independent claims 1, 4, 11,13, 16 and 23 all read above this reference and are therefore allowable over the prior art of record. Further dependent claims 2, 5-10,15 and 17-22 further limit that which was allowable and therefore are also allowable for the reasons disclosed above as well as for the further limitations set forth ion these dependent claims.

Art Unit: 2318

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Claims 1, 3-11, 13 and 15-23 are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Frank J. Asta whose telephone number is (703) 305-3817. The examiner can normally be reached on Mondays through Thursdays from 7 A.M. to 3 P.M. Et.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tod R. Swann, can be reached on (703) 308-7791. The fax phone number for this Group is (703) 308-6606.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 305-9605.

FJA/Oct 31 1996



Frank J. Asta

PRIMARY EXAMINER  
Group 2300

FRANK J. ASTA  
PRIMARY EXAMINER  
GROUP 2300



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ALEXANDRIA, VA 22313-1404

Note attached communication from the Examiner

This notice is issued in view of applicant's communication filed \_\_\_\_\_

NOTICE OF ALLOWANCE  
AND ISSUE FEE DUE

SERIES CODE/SERIAL NO.	FILING DATE	TOTAL CLAIMS	EXAMINER AND GROUP ART UNIT	DATE MAILED
08/437,975	05/10/95	020	ASTA, F	2318 11/05/96
First Named Applicant	ZURAVLEFF,	WILLIAM K.		

TITLE OF INVENTION A CONTROLLER FOR A SYNCHRONOUS DRAM THAT MAXIMIZES THROUGHPUT BY ALLOWING MEMORY REQUESTS AND COMMANDS TO BE ISSUED OUT OF ORDER (AS AMENDED)

	ATTY'S DOCKET NO.	CLASS-SUBCLASS	BATCH NO.	APPLN. TYPE	SMALL ENTITY	FEES DUE	DATE DUE
2	018414-082	395-481.000	611	UTILITY	NO	\$1290.00	02/05/97

**THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT.  
PROSECUTION ON THE MERITS IS CLOSED.**

**THE ISSUE FEE MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED.**

**HOW TO RESPOND TO THIS NOTICE:**

- I. Review the SMALL ENTITY Status shown above.  
If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:
  - A. If the status is changed, pay twice the amount of the FEE DUE shown above and notify the patent and Trademark Office of the change in status, or
  - B. If the Status is the same, pay the FEE DUE shown above.
- If the SMALL ENTITY is shown as NO:
  - A. Pay FEE DUE shown above, or
  - B. File verified statement of Small Entity Status before, or with, pay of 1/2 the FEE DUE shown above.
- II. Part B of this notice should be completed and returned to the Patent and Trademark Office (PTO) with your ISSUE FEE. Even if the ISSUE FEE has already been paid by charge to deposit account, Part B should be completed and returned. If you are charging the ISSUE FEE to your deposit account, Part C of this notice should also be completed and returned.
- III. All communications regarding this application must give series code (or filing date), serial number and batch number. Please direct all communication prior to issuance to Box ISSUE FEE unless advised to contrary.

***IMPORTANT REMINDER: Patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.***



UNITED STATES DEPARTMENT OF COMMERCE  
Patent and Trademark Office

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WASHINGTON, D.C. 20231

**NOTICE OF ALLOWANCE AND ISSUE FEE DUE**

B3M1/1126

JAMES A LABARRE  
BURNS DOANE SWECKER & MATHIS  
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ALEXANDRIA VA 22313-1404

APPLICATION NO.	FILING DATE	TOTAL CLAIMS	EXAMINER AND GROUP ART UNIT	DATE MAILED
08/437,975	05/10/95	020	ASTA, F	2318 11/05/96
First Named Applicant	ZURAVLEFF,	WILLIAM K.		

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2 018414-082	395-481.000	G11	UTILITY	NO	\$1290.00	02/05/97

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B. If the status is the same, pay the FEE DUE shown above.

If the SMALL ENTITY is shown as NO:

- A. Pay FEE DUE shown above, or

- B. File verified statement of Small Entity Status before, or with, payment of 1/2 the FEE DUE shown above.

- II. Part B of this notice should be completed and returned to the Patent and Trademark Office (PTO) with your ISSUE FEE. Even if the ISSUE FEE has already been paid by charge to deposit account, Part B should be completed and returned. If you are charging the ISSUE FEE to your deposit account, section "6b" of Part B should be completed.

- III. All communications regarding this application must give application number and batch number. Please direct all communication prior to issuance to Box ISSUE FEE unless advised to the contrary.

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**3. PATENT AND TRADEMARK OFFICE COPY**